



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-0606; Project Identifier 2019-SW-070-AD; Amendment 39-21832; AD 2021-24-11]

RIN 2120-AA64

Airworthiness Directives; Leonardo S.p.a. Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Leonardo S.p.a. Model A109E, A109S, and AW109SP helicopters. This AD was prompted by reports of main landing gear (MLG) wheel assembly failure. This AD requires repetitive inspections of each affected MLG strut assembly and, depending on the findings, replacement of an affected MLG strut assembly with a serviceable assembly, or application of corrosion preventive compound, as specified in a European Union Aviation Safety Agency (EASA) AD, which is incorporated by reference. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For EASA material incorporated by reference (IBR) in this AD, contact EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; telephone +49 221 8999 000; email ADs@easa.europa.eu; Internet www.easa.europa.eu. You may find the EASA material on the EASA website at <https://ad.easa.europa.eu>. You may view this material at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material

at the FAA, call (817) 222-5110. It is also available in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0606.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0606; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the EASA AD, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Darren Gassetto, Aerospace Engineer, COS Program Management Section, Operational Safety Branch, Compliance & Airworthiness Division, FAA, 1600 Stewart Ave., Suite 410, Westbury, NY 11590; telephone (516) 228-7323; email Darren.Gassetto@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

EASA, which is the Technical Agent for the Member States of the European Union, has issued EASA AD 2019-0182, dated July 26, 2019 (EASA AD 2019-0182), to correct an unsafe condition for Leonardo S.p.A. Helicopters, formerly Finmeccanica S.p.A. Helicopter Division, AgustaWestland S.p.A., Agusta S.p.A., Model A109E, A109LUH, A109S, and AW109SP helicopters, all serial numbers. Model A109LUH helicopters are not certificated by the FAA and are not included on the U.S. type certificate data sheet; this AD therefore does not include those helicopters in the applicability. Although EASA AD 2019-0182 applies to Model A109E, A109S and AW109SP helicopters, all manufacturer serial numbers, this AD applies to helicopters with an affected assembly installed.

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to Leonardo S.p.a. Model A109E, A109S, and AW109SP helicopters, certificated in any category, with an affected assembly as identified in EASA AD 2019-0182. The NPRM published in the *Federal Register* on

July 30, 2021 (86 FR 40964). The NPRM was prompted by reports of MLG wheel assembly failure on Model A109E helicopters. Subsequent investigations identified stress corrosion and hydrogen embrittlement on the threaded end of the MLG strut, where lack of cadmium plating was observed, and determined that a certain batch of “enhanced” MLGs may be affected. Due to design similarity Model A109S and AW109SP helicopters are also affected. The NPRM proposed to require repetitive inspections of each affected MLG strut assembly and, depending on the findings, replacement of an affected MLG strut assembly with a serviceable assembly, or application of corrosion preventive compound, as specified in EASA AD 2019-0182.

The FAA is issuing this AD to address stress corrosion and hydrogen embrittlement on the threaded end of the MLG strut in the MLG wheel assembly. This condition, if not addressed, could lead to cracks on the affected MLG assembly, resulting in damage or failure of the MLG and consequent damage to the helicopter and injury to occupants. See EASA AD 2019-0182 for additional background information.

Discussion of Final Airworthiness Directive

Comments

The FAA received a comment from one commenter. The commenter was Air Methods Corporation. The following presents the comment received on the NPRM and the FAA’s response to that comment.

Request to Allow Part Replacement

Air Methods Corporation requested that paragraph (h)(6) of the proposed AD be revised to include an option so an operator can replace a part or assembly that has an inspection finding of “questionable/intermediate” at the operator’s discretion, instead of having to coordinate with the manufacturer. The commenter explained that the instructions for replacing a part or assembly that has a determinate inspection finding (for example, a crack) are already in the service information referenced in EASA AD 2019-0182 and these same instructions could be used for parts that have a “questionable/intermediate” inspection finding.

The FAA partially agrees with the commenter’s request and will provide clarification regarding the requirement specified in paragraph (h)(6) of this AD. The FAA

identified an error in paragraph (h)(6) of the proposed AD that could have caused an operator to misinterpret when to contact the manufacturer for corrective action if there was an inspection finding of “some burr” from the liquid penetrant inspection specified in Annex A of the service information referenced in EASA AD 2019-0182. In the proposed AD, paragraph (h)(6) stated “Where Annex A of the service information referenced in EASA AD 2019-0182 specifies to contact the manufacturer if there is any indication of cracking due to ‘some burr’” This language should not have included “of cracking” because any burr indication finding requires contacting the manufacturer. The FAA has revised paragraph (h)(6) of this AD to remove the words “of cracking.”

The FAA does not agree with the commenter’s request to provide an option for the removal and replacement of a part having an indication of “some burr”, or signs of arcing or burning, without contacting the manufacturer. The FAA contacted EASA, the foreign authority that has State of Design for these helicopter models, and discussed an option to permit the replacement of a potentially discrepant component without contacting the manufacturer. Based upon this discussion the FAA concluded that the affected part is still under investigation and the manufacturer needs to gather additional information from operators to determine the extent of the identified conditions and if additional corrective actions are needed. The FAA has not changed this AD regarding this issue.

Conclusion

These helicopters have been approved by EASA and are approved for operation in the United States. Pursuant to the FAA’s bilateral agreement with the European Union, EASA has notified the FAA about the unsafe condition described in its AD. The FAA reviewed the relevant data, considered the comment received, and determined that air safety requires adopting this AD as proposed. Except for minor editorial changes, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator. Accordingly, the FAA is issuing this AD to address the unsafe condition on these helicopters.

Related Service Information Under 1 CFR Part 51

EASA AD 2019-0182 requires repetitive inspections of each affected MLG assembly and, depending on the findings, replacement of an affected MLG strut assembly with a serviceable assembly, or application of corrosion preventive compound. EASA AD 2019-0182 allows the installation of an affected MLG strut assembly on any helicopter, provided it is a serviceable assembly, as defined in EASA AD 2019-0182.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Costs of Compliance

The FAA estimates that this AD affects 99 helicopters of U.S. Registry. The FAA estimates the following costs to comply with this AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection and application of corrosion protective compound	2 work-hours X \$85 per hour = \$170 per inspection cycle	\$17 per inspection cycle	\$187 per inspection cycle	\$18,513 per inspection cycle

The FAA estimates the following costs to do any necessary replacement actions that would be required based on the results of the inspection. The agency has no way of determining the number of aircraft that might need this replacement:

On-condition costs

Action	Labor cost	Parts cost	Cost per product
Replacement of damaged MLG strut assembly	3 work-hours X \$85 per hour = \$255	\$28,100	\$28,355

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2021-24-11 Leonardo S.p.a.: Amendment 39-21832 Docket No. FAA-2021-0606;
Project Identifier 2019-SW-070-AD.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Leonardo S.p.a. Model A109E, A109S, and AW109SP helicopters, certificated in any category, with an affected assembly as identified in European Union Aviation Safety Agency (EASA) AD 2019-0182, dated July 26, 2019 (EASA AD 2019-0182) installed.

(d) Subject

Joint Aircraft Service Component (JASC) Code: 3213, Main Landing Gear Strut/Axle/Truck.

(e) Unsafe Condition

This AD was prompted by reports of main landing gear (MLG) wheel assembly failure. The FAA is issuing this AD to address stress corrosion and hydrogen embrittlement on the threaded end of the MLG strut in the MLG wheel assembly. This condition, if not addressed, could lead to cracks on the affected MLG assembly, resulting in damage or failure of the MLG and consequent damage to the helicopter and injury to occupants.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Requirements

Except as specified in paragraph (h) of this AD: Comply with all required actions and compliance times specified in, and in accordance with, EASA AD 2019-0182.

(h) Exceptions to EASA AD 2019-0182

(1) Where EASA AD 2019-0182 requires compliance in terms of flight hours, this AD requires using hours time-in-service.

(2) Where EASA AD 2019-0182 refers to its effective date, this AD requires using the effective date of this AD.

(3) Where the service information referenced in EASA AD 2019-0182 specifies to return a certain part to the manufacturer, this AD does not include that requirement.

(4) This AD does not mandate compliance with the “Remarks” section of EASA AD 2019-0182.

(5) Where the service information referenced in EASA AD 2019-0182 specifies to discard certain parts, this AD requires removing those parts from service.

(6) Where Annex A of the service information referenced in EASA AD 2019-0182 specifies to contact the manufacturer if there is any indication due to “some burr”; and Annex B of the service information specifies to contact the manufacturer if there are signs of arcing or burning on a part; before further flight, the instructions or corrective actions (including part replacement if necessary) must be accomplished using a method approved by the Manager, International Validation Branch, FAA; or EASA; or Leonardo S.p.A.’s EASA Design Organization Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature.

(i) No Reporting Requirement

Although the service information referenced in EASA AD 2019-0182 specifies to submit certain information to the manufacturer, this AD does not include that requirement.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the International Validation Branch, send it to the attention of the person identified in paragraph (k) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(k) Related Information

For more information about this AD, contact Darren Gassetto, Aerospace Engineer, COS Program Management Section, Operational Safety Branch, Compliance & Airworthiness Division, FAA, 1600 Stewart Ave., Suite 410, Westbury, NY 11590; telephone (516) 228-7323; email Darren.Gassetto@faa.gov.

(l) Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) European Union Aviation Safety Agency (EASA) AD 2019-0182, dated July 26, 2019.

(ii) [Reserved]

(3) For EASA AD 2019-0182, contact EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; telephone +49 221 8999 000; email ADs@easa.europa.eu; Internet www.easa.europa.eu.

(4) You may view this service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110. This material may be found in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0606.

(5) You may view this material that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email fr.inspection@nara.gov, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on November 15, 2021.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

[FR Doc. 2021-26681 Filed: 12/9/2021 8:45 am; Publication Date: 12/10/2021]